"Why Does My Engine Run On After I Turn It Off?"

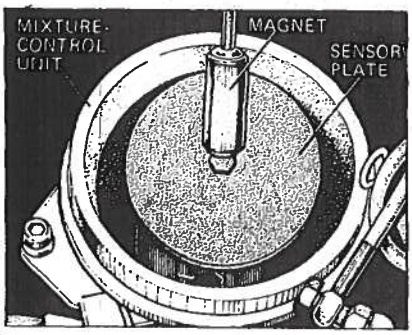
An engine is said to diesel when it continues to run—although unevenly—after the ignition is shut off. The following malfunctions can contribute to this:

- A defective EGR valve.
- A leaking fuel-injector nozzle.
- Carbon in a cylinder.
- A ruptured spark-advance diaphragm.
- A damaged choke vacuum break.
- An inoperative idle-stop solenoid.
- An incorrect idle adjustment.

Three conditions—a combination of unburned fuel in the cylinders, a source of ignition after the engine is turned off and a supply of air—must be present for dieseling to occur. The fuel burns and engine run-on continues until all fuel is consumed.

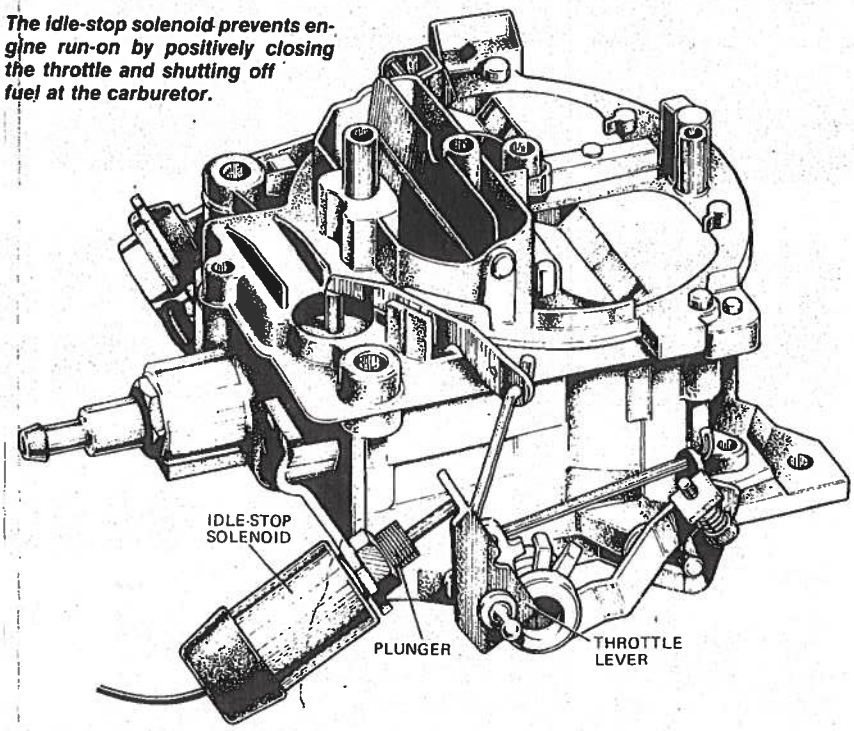
To control dieseling, you must stop the input of fuel as the ignition is turned off, shut off the air supply or control the ignition source. If your engine diesels, consider:

- Is the octane of your fuel too low? An additive in higher-octane fuels resists ignition when the engine is turned off.
- Is engine timing set properly? Incorrect ignition timing can raise combustion temperature. When the engine is shut off, deposits in the chamber glow and provide ignition.
- Any component controlled by vacuum can cause dieseling if it is defective and offers an air inlet after the engine is turned off. See Section 2 for an EGR valve check and Section 8 for a vacuum-break diagnosis.
- Is the carburetor out of adjustment? A high idle speed is the most likely cause of dieseling.
- Is the throttle linkage catching on something as it returns to idle position in preparation for a shutdown? If so, idle speed will rise and probably cause dieseling.



Test VW fuel injector with magnet to lift sensor plate in mixture control unit.

The idle-stop solenoid prevents engine run-on by positively closing the throttle and shutting off fuel at the carburetor.



- Have you ever treated your engine with carbon solvent? It's worth a shot, since a plug of carbon in a cylinder may get hot enough to serve as a source of ignition.

Testing an idle-stop solenoid

If your engine has an idle-stop solenoid, you'll find it on the carburetor. To test it:

1. Watch the solenoid as someone starts the engine, accelerates it quickly to half-throttle and then lets it drop to idle. The solenoid plunger should come out and catch the throttle lever as it snaps closed.

2. Turn off the engine. The plunger should retract at once, letting the throttle close. If it doesn't, the engine may diesel.

3. If these things don't happen, detach the wire from the solenoid terminal and turn off the ignition. Check with a voltmeter or test light for battery voltage. If there is none, replace the wire. If voltage is okay, reconnect the wire.

4. Hook up a tachometer and adjust engine idling speed to maker's specification. Use a small wrench to turn the idle-stop plunger. Retest solenoid. If it doesn't function, it's no good. Install a new one.

Test for a leaking injector

Fuel injection systems are not hard to troubleshoot. For example, to test for a VW leaking injector system, you'd do this:

1. By hand, pull one of the injectors from the manifold tube. Leave the fuel hose attached.

2. Remove the rubber duct from the top of the mixture control unit to uncover the sensor plate.

3. Remove the fuel-pump relay and connect a jumper (see Section 1).

4. Point end of the injector in a glass and use a magnet to lift the sensor plate. The injector should eject fuel in a proper spray pattern.

5. Release the sensor plate. If the end of the injector drips, replace it.

6. If the injector is okay, moisten the rubber seal with gasoline and press the injector firmly in its seat in the manifold tube. Test each injector the same way. **PM**